

Chapter 2: Architectural Programming

Contents	page
2-1 Using this Chapter	2-1
2-2 Programming Process	2-1
2-3 Functions Program	2-3
A. Overall Functions	2-3
B. Specific Functions	2-3
2-4 Space Program	2-6
2-5 Site and Building Selection	2-6
A. Site Evaluation Criteria	2-7
B. Building Suitability Criteria	2-10

2-1 Using this Chapter

This chapter provides guidance for developing the Architectural Program for the Band Training Facility, and criteria for selecting an appropriate site for new construction or an existing building to renovate.

Included are discussion of the steps and considerations involved in the programming process, a description of the functions the building is to accommodate and their requirements, and the recommended set of spaces. The chapter provides recommended space programs including square footage allocations for all spaces, for the two standard size facilities. This programming process is primarily the work of the band personnel with assistance from the Facility Engineer. The product of this process—the Architectural Program—directs the engineers and designers in the requirements the facility design must meet, and provides the basis for development of the DD Form 1391 and Project Development Brochure (see Paragraph 1-5 of this Guide, AR 415-15, and AR 415-20).

The site selection criteria are to be applied in the site review process described in Paragraph 1-5, Responsibilities in the project development process (see also AR 210-20). Because many bands are accommodated in reused facilities, criteria for evaluation of existing buildings are emphasized. These site and building selection deliberations should involve joint consideration by the band personnel and the Facility Engineer/Installation Masterplanner.

2-2 Programming Process

The steps involved in developing an Architectural Program for the band facility are shown in Figure 2-1. This is a part of the project development process presented in Paragraph 1-5 and Figure 1-1 of this Design Guide, leading to the DD Form 1391 and Project Development Brochure outputs. While this process and the considerations involved are generally applicable, each post may adapt the proc-

ess and modify the recommended function and space programs presented in this chapter, as appropriate to local band operations and planning requirements. The key steps of the process include:

A. Functional Description and Analysis. In this phase, band personnel develop a complete picture of the local Army Band training activities required to be accommodated, within the guidelines of this Guide. This includes consideration of the list of functions in which the band is involved and required for its support, the numbers and types of people involved in each, their schedules, equipment requirements, and specific activity flows.

Paragraph 2-3 presents the issues to consider in this task and a model Functions Program, which is the product of this phase. The functions included in this model, and the standards provided in R 220-90, must be considered in light of the specific local band function pattern, in developing the program for the individual post.

B. Spatial Implications. This involves consideration of the space accommodation issues of the functions program developed above—both overall facility criteria and individual activity needs, and priorities to be applied when necessary. Analysis is required of dimensional and quantity needs, desired spatial characteristics and relationships, and critical technical issues, in support of each of the activi-

ties to be accommodated. Guidance in these considerations is given in Chapter 3, General Design Considerations, and Chapter 4, Individual Space Criteria.

C. Space Program. The outcome of the above considerations is an articulated space and performance requirements program for the facility. This includes the proposed set of function-spaces and, for each, the proposed size, number, spatial character, relationships, critical dimensions, furnishings and equipment, acoustic and other technical criteria. Paragraph 2-4 presents summary space programs with function-spaces and area requirements. Chapter 4 provides the criteria for full development of the space-by-space program requirements.

D. Site/Building Selection. Once the space program is developed and the overall building and site area requirements are known, site selection and evaluation of existing buildings for renovation to meet these requirements can take place. Criteria for consideration in these evaluations are presented in Paragraph 2-5.

E. Test by Design. Initial sketch designs test the validity of the functional analyses and space proposals made in the programming process. This should be done on the basis of the site selected for construction or existing building chosen for renovation, with its particular constraints and potentials. The sketch designs permit analysis of the

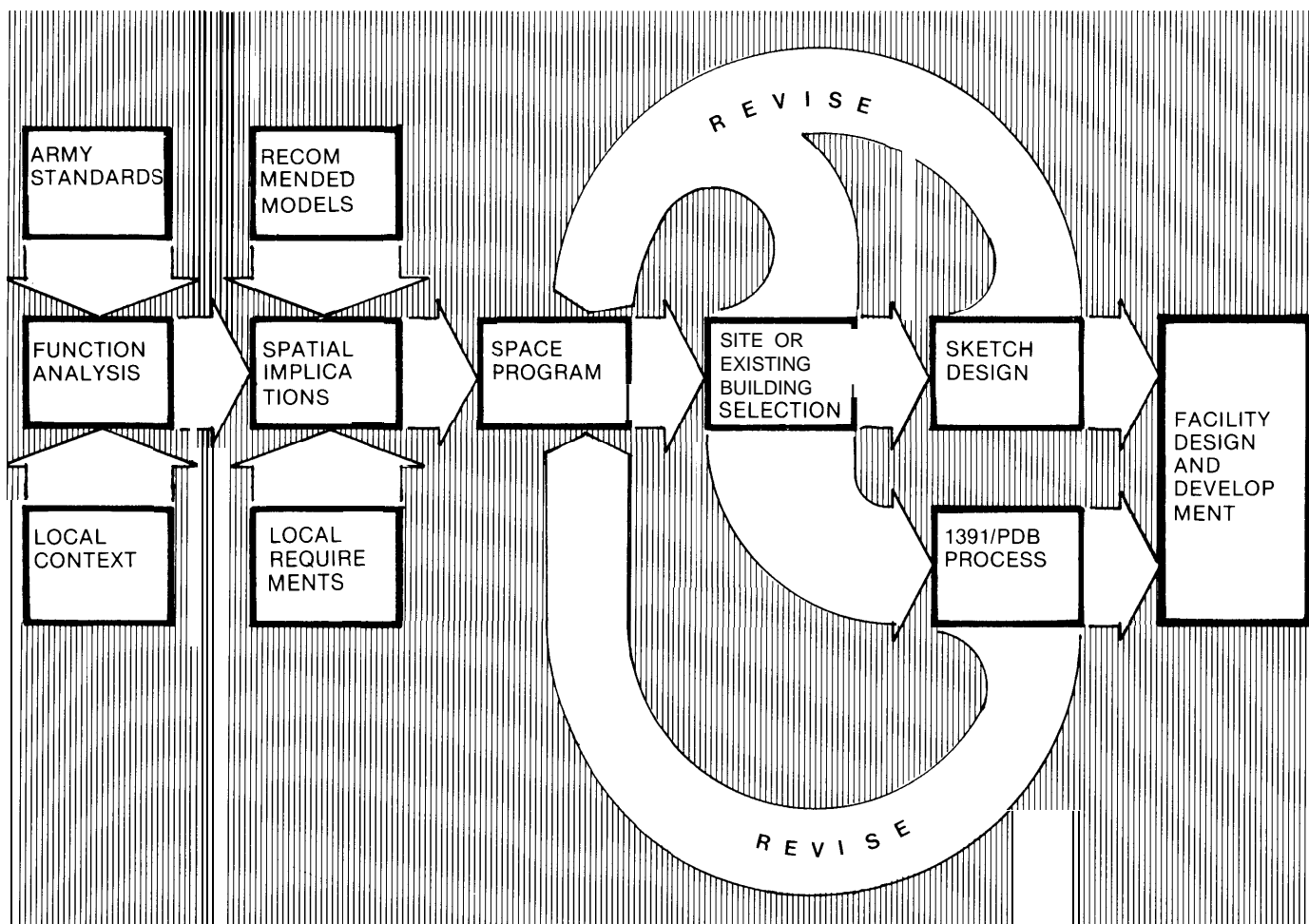


Figure 2-1. Space Programming Process

March 1983

Architectural Programming

match to local band requirements and broaden the understanding of the space needs and use. This may result in revisions to the space program, prior to initiation of facility design and development.

2-3 Functions Program

The description presented here of the general and specific functions an Army Band Training Facility must accommodate is generally valid for Active and Reserve Component Bands. While it is recognized that each band may have slightly different operating practices, only minor variations in the functions program should be made for a specific band facility. Substantive program changes may hinder future changes in mission operations emphases.

The Band Officer and his senior personnel—Associate Commander, Enlisted Bandleader, performance group leaders, etc.—should review the functions description presented here and note minor differences in their local operation. These local notes should be incorporated into the Architectural Program, to inform the facility designers of the accommodation requirements as explicitly as possible, and should be reflected in a modified, locally appropriate space program.

A. Overall Function

The overall function of the facility is that of rehearsal and practice for an Army Band. The building is for the band personnel and their serious musical activities, and support functions required for operation of the band. Recreation and relaxation activities take place, before or after practice and performance functions, as part of the band's active daily schedule. Performance and visitor use of the facility is minor. Rehearsal and practice are always the priority functions to accommodate.

There are two required sizes of Active Duty Bands, to which this Design Guide is directly addressed—45 person and 65 person. At times, a band may not have its full complement of personnel, but the facilities should be designed for these sizes, which are the required levels. While not directly addressed here, the functions of the larger Premier Bands and of National Guard and Army Reserve Bands are similar in many ways to those presented in this section.

Each Army Band has a multiplicity of diverse performance groups, outlined in 2-3.B.1, below. While the array and size of performance groups are relatively standardized from post to post, local variations exist in performance emphases, schedule and frequency of activities or different groups, and specific types of small combos, which will effect the use of the building spaces. Each installation's facility must accommodate the various rehearsal, practice and support needs of its local band.

B. Specific Functions

Specific functions to be accommodated in the Army Band Training Facility, and critical issues about their operation, include:

1. Rehearsal. Space is required for rehearsal of the diverse range of performance groups: (see Figure 2-2)

- Concert Band—full band strength, including brass, woodwind, and percussion sections.
- Marching Band—full band strength, including brass, woodwind, and percussion sections.
- Stage Band—approximately 18 to 25 members; typically two per band; for dance-band music.
- Show Band—approximately 12 members; may be more than one; play popular music.
- Jazz Combo—5-6 members.
- Various Ensembles—popular music groups, brass choir, percussion, bluegrass, etc.; varies by post.
- Chorus—typically included in a 65 person band and not in a 45; drawn from same full band strength.
- Simultaneous rehearsals of two or more of any of the medium-sized groups or sections may need to be held.
- Rehearsals sometimes include visitors and additional players in small numbers, beyond the band personnel themselves.

2. Practice. (see Figure 2-3)

- For individuals or small groups, and sections of performance groups (2-6 persons).
- Some have large, difficult to set-up or transport instrument requirements (e.g., percussion, piano).

3. Performance.

- Not a likely or essential function in Band Training Facilities, for most line bands; although some bands do have, for small audiences.
- Performances generally take place elsewhere on-post or off-post, as commitments require.

4. Recording. (see Figure 2-4)

- Recordings are made for band training (playback and study), internal Army use, and promotion (such as recruiting). They are mostly on tape, but sometimes records are cut for distribution.
- Not assumed to be professional-quality recording activity,

5. Library. (see Figure 2-5)

- Music storage and retrieval, for concert-size and marching-size music.
- Music layout and distribution for performances and rehearsals.
- Music arrangement and copying.
- Music sorting and cataloging, care and maintenance.
- Reference books and educational materials storage and retrieval.
- Phonograph record storage, lending and maintenance.
- Library administration.

6. Administration and Operations. (see Figure 2-6)

- Activities of Bandmaster (Commander), Associate Bandmaster (for 65 person bands only), Enlisted Bandleader, and Non-Commissioned Officers.



Figure 2-2. Band Rehearsal (The U.S. Army Band and Chorus; Brucker Hall, Ft. Myer, Vs.)

- Operations activities of performance group leaders (brass, woodwind, percussion).
- Administrative activities, including: transportation, operations, information, training, recruiting/re-enlistment, performance commitments, personnel, budget, issues, general clerical.
- Charge-of-Quarters (CQ) activities (see 9. Transition, below).
- Information/communication, within band and externally.

7. Personal Support. (see Figure 2-7)

- Individually-issued uniform and instrument storage.
- Instrument cleaning.
- Uniform pressing.
- Showers and changing, before and after or between performances.
- Toileting.
- Relaxation and recreation during break times; lounging, cards, table games, magazine reading, pool, ping pong, table hockey, etc.
- Refreshments-food vending, coffee, drinks.
- Mail distribution (optional function; not in all facilities).

8. Storage and Supply (see Figure 2-8)

- Unit Supply administration and operation.
- Receipt, storage, maintenance, issue and collection, for: non-issued instruments and uniforms; instrument cases; equipment, including lighting, electronic equipment, portable generators, etc.; heraldic regalia; expendable musical supplies (reeds, wax, strings); musical instrument repair parts; general and office supplies; and linens (possibly in Band Training Facility; may be handled at barracks, by HQ command or otherwise).
- Security is a critical concern, especially for high-cost instruments and equipment.
- Uniform cleaning-collection and distribution; cleaning typically done out of facility.
- Instrument repair.
- Weapons storage (optional function; typically not in band facility).



Figure 2-3. Small Group Practice



Figure 2-4. Audio Control and Recording



Figure 2-5. Music Library (Brucker Hall)

- Janitorial and building maintenance supplies and operations.

9. Transition.

- Entry and Circulation, often for large numbers of band personnel simultaneously, moving in and out of rehearsal and other activity areas.
- Movement of equipment, particularly large instruments and electronic equipment, between storage, rehearsal and practice spaces, and outdoors.
- Reception and control - for visitors, after-hours phone coverage, security and check-in (CQ functions).
- Trophy and memorabilia display.



Figure 2-6. Band Administration



Figure 2-7. Individual Instrument Storage



Figure 2-8. Large Instrument Storage

10. Outdoor Activities. (see Figure 2-9)

- Outdoor rehearsal, marching practice, ceremonial drill.
- Performance-possible, but not essential at the Band Training Facility.
- Parking for all band personnel, plus visitors.
- Delivery, loading and unloading of equipment and instruments.
- Bus loading and unloading.

2-4 Space Program

A Space Program is developed to indicate the space requirements to accommodate the functions in the Functions Program, discussed in Paragraph 2-3. It includes the set of required spaces, their areas, and their critical spatial characteristics, relationships, technical and support requirements, for a Band Training Facility.

Table 2-1 provides a summary list of the set of spaces to be included in the space program, and recommended square foot areas for each of these spaces, for Band Training Facilities for 45 person and 65 person bands. Detailed presentation of the critical dimensional and spatial characteristics, relationships, technical and other requirements for each space is found in Chapter 4, Individual Space Criteria. Figure 2-3 provides a diagrammatic presenta-

tion of the spaces to be included and their recommended relationships. (see Figure 2-10)

As discussed in Paragraph 2-3, these space program recommendations are generally applicable to the two indicated sizes of Active Duty Bands. They provide an adequate, but not overly generous, accommodation of the requirements of these bands. However, local differences in operational patterns and function programs may require some modifications to the space program to be most suitable to local needs. These differences may, for example, include: larger or smaller size for individual spaces; different relationship patterns between spaces; or elimination or addition of specific spaces for identified local functions. Local band personnel should review the recommended programs and make changes based on specific functional and operational differences, following the functional accommodation approach and spatial character guidance provided in this Design Guide.

2-5 Site and Building Selection

Selection of a site for construction of an Army Band Training Facility must be based upon the locally developed functions and space program, as described in the previous sections of this chapter, and on the site evaluation criteria outlined below. Where renovation of an existing facility for band training purposes is being considered, all the same



Figure 2-9. Outdoor Performance

site selection criteria apply, plus the building suitability criteria outlined in subparagraph 2-5.B.

Individual sites or buildings being evaluated may not be able to meet all the criteria indicated. Certain site and building suitability criteria, as discussed below, are essential to a viable band facility and must be met. Others, which are desirable but not mandatory, should be considered and used to rank alternative possible sites or buildings against. Judged against all these factors, the overall most satisfactory site should be selected. Where an existing facility to be renovated is being selected, satisfying the essential criteria for building suitability for band functions will typically outweigh the less critical site location factors.

A. Site Evaluation Criteria.

Significant requirements and criteria for evaluation of potential sites for Band Training Facilities include:

1. Site Size. The site must be large enough to comfortably accommodate the band training building and all the outdoor function-spaces: a drill area for outdoor rehearsal

and marching practice; loading dock/outdoor performance area, with truck and service access; parking area for all band members, plus visitors; automobile and bus drop-off and loading zone, plus access drives. See Table 2-1 for recommended area requirements for these outdoor function-spaces for the two facility sizes. Assume the site area required for the building itself equals the gross total area, including mechanical, as shown in table 2-1.

2. Desirable Proximities. It is preferred for Band Training Facilities to be located near the installation parade ground, for convenience of performance of the ceremonial functions which are a prominent part of the band's activities. Proximity to general post operations areas, for performance convenience, and to band personnel billets, for access convenience, are also desirable. However, many performance commitments, and housing for much of the band, will inevitably be found elsewhere, in dispersed locations.

Co-location of band training and band personnel billets in the same structure may be considered. Some savings would be likely in shared personal support spaces, such

Table 2-1 Recommended Space Allocations for Army Band Training Facilities Area Requirements

Function-Space	Area Requirements			
	45 Person		65 Person	
	spaces required	Net Sq. Ft. (NSF)	spaces required	Net Sq. Ft. (NSF)
Main Rehearsal Room	1	1,575	1	2,275
Practice Rooms				
Large Group	1	700	1	700
Small Group	1	300-350	2	300-350
Large Individual	2-4	80-125 ea.	3-6	80-125 ea.
Small Individual	6-8	55-65 ea.	9-12	55-65 ea.
	total 8-10	total 825	total 12-15	total 1,145
Recording/Audio Control Booth	1	250	1	250
Library	1	500	1	640
Offices				
Commander	1	200	1	200
Associate Commander	0	—	1	150
Englisted Bandleader	1	150	1	150
NCO/Performance Group	1 w/3	210	1 w/4	280
Leaders	desks		desks	
Administration and	1 w/4	425	1 w/6	575
Operations/Transportation	desks		desks	
Personal Support				
Individ. Instr. Lockers	1	520	1	680
Instrument Cleaning	1	75	1	75
Day Area	1	640	1	860
Toilets/Lockers/Showers				
men		880		1,200
women		450		480
Officer's Toilet	0		-1	50
Storage and Supply				
Unit Supply/Storage	1	1,000	1	1,300
Instrument Repair	1	100	1	100
Janitor's Closet	1	50	1	50
Transition				
Lobby	1	600	1	900
Circulation		as needed		as needed
Outdoor Spaces				
Drill Area	1	30,000	1	30,000
Loading Dock	1	300	1	300
(Performance/Loading Combined-Optional)		(1,100)*		(1,500)
Parking Area	45	13,500	65	19,500
Total Indoor Spaces-Net Only		9,500		12,760
Circulation, Walls, etc. @ 25%		2,380		3,190
GROSS TOTAL		11,880		15,950
Mechanical Spaces @ 5%		600		800
Total Including Mechanical		12,480		16,750

* If performance option is chosen, square footage includes 300 S.F. loading function.

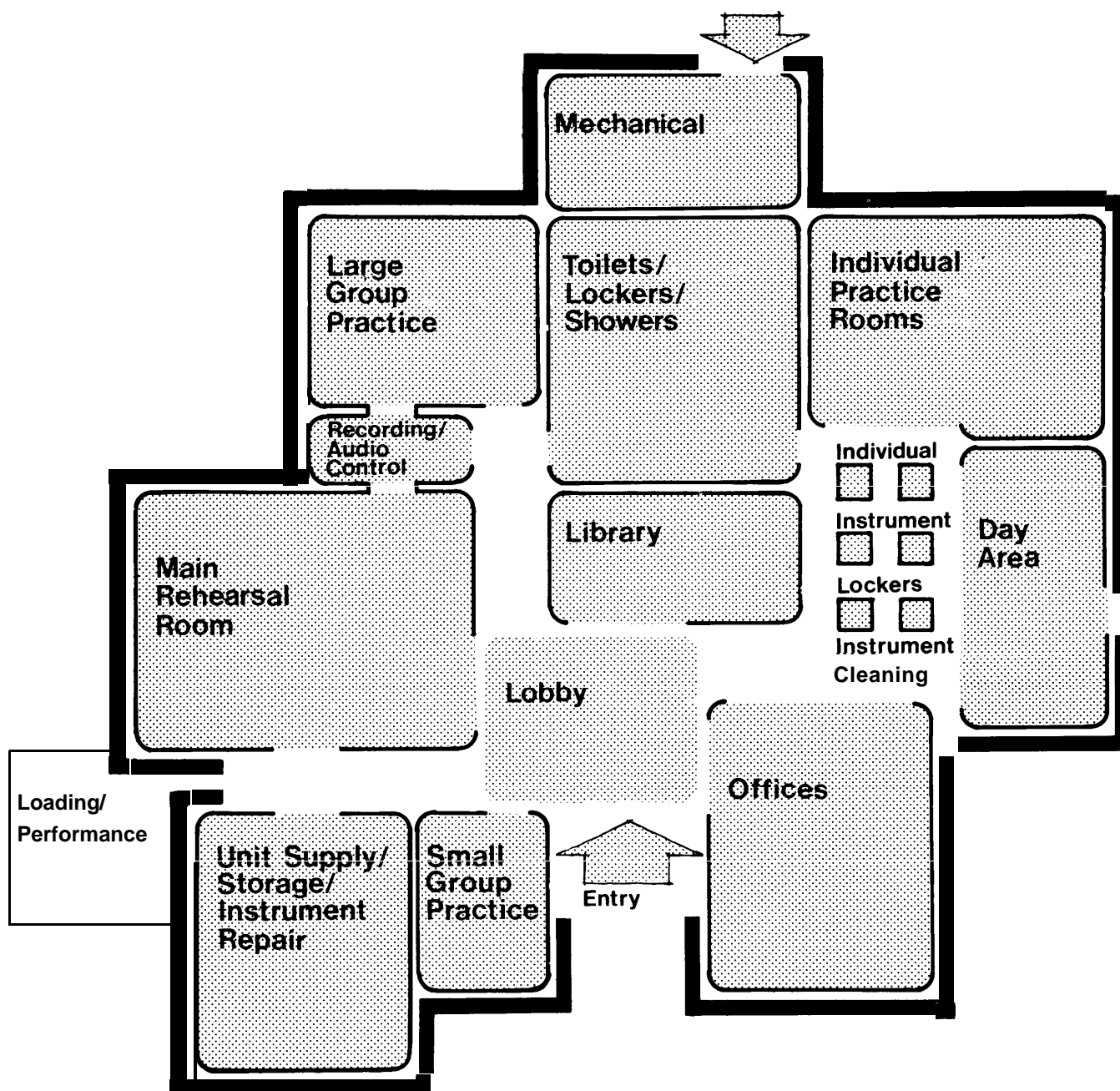


Figure 2-10. Spaces and Relationships for Army Band Training Facilities.

as day areas and showers. However, potential problems exist in security control of access doors, and in sound transmission and interference between the two function-areas.

3. **Inappropriate Proximities.** The site for the band facility must be quiet, located away from truck routes, heavy equipment operations, runways and flight paths, and helicopter landing areas. The outdoor practice field must not be located between closely spaced buildings, especially with facing parallel walls, to avoid echoes which make hearing and practice difficult. Functions in buildings adjacent to the Band Training Facility should not be those which would be disturbed by outdoor practice or performance noise.

4. **Site Access.** The site configuration and relationships to access roads should readily permit design of good, separate patterns for the multiple access needs of the band facility. This should include service access to the loading dock and mechanical space distinctly separate from the main entrance, preferably to the side or rear of the building. The parking area access should also be separate. The potential should exist for the provision of a car/bus dropoff space at the main entrance.

5. **Topography.** The topography of the site should be easy to develop at minimum cost, with no extraordinary requirements for foundations or drainage. Slopes in the building area and the surrounding outdoor activity spaces should not require expensive grading and site preparation, or

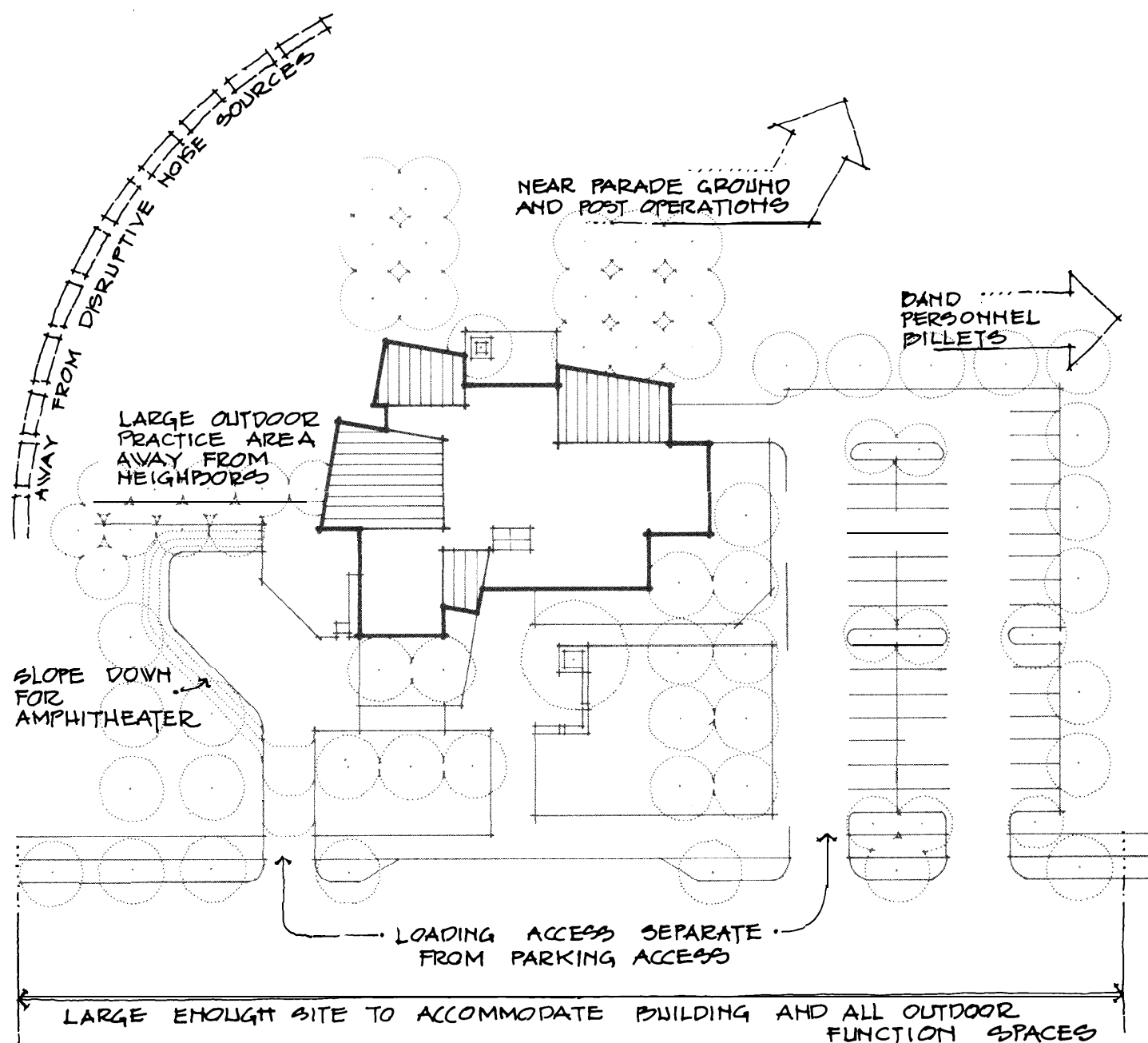


Figure 2-11. Site Evaluation Criteria

difficulty for bicycle and wheelchair access. Flat or slightly ramped access to the building is particularly important because of the frequent movement of large instruments and equipment. However, the ground around the service apron should slope down toward the loading dock, to form a natural amphitheater for outdoor performances. If a site is otherwise acceptable, construction of earth berms may be used to form the amphitheater. (see Figure 2-11)

B. Building Suitability Criteria

There are two approaches to utilizing an existing building to renovate as a Band Training Facility. One is to find a building which is: at least as large as the required area to

accommodate all the program spaces; built of heavy construction (masonry or concrete), to provide the required acoustic properties; and with sufficient space of a minimum 15-foot ceiling height to accommodate the Main Rehearsal and Large Group Practice Rooms. Such a building could be used to house the band training functions entirely within the existing structure (see Figure 2-5 for example). The criteria for selecting a building suitable for this purpose are discussed in detail below. (see Figure 2-12)

The second approach is to find a building smaller than the required program area, and add the musically critical rooms in new construction (see figure 2-6). Square footage can be between 5,000 and 10,000 square feet, for a 45-member band, with new construction bringing the total

March 1983

Architectural Programming

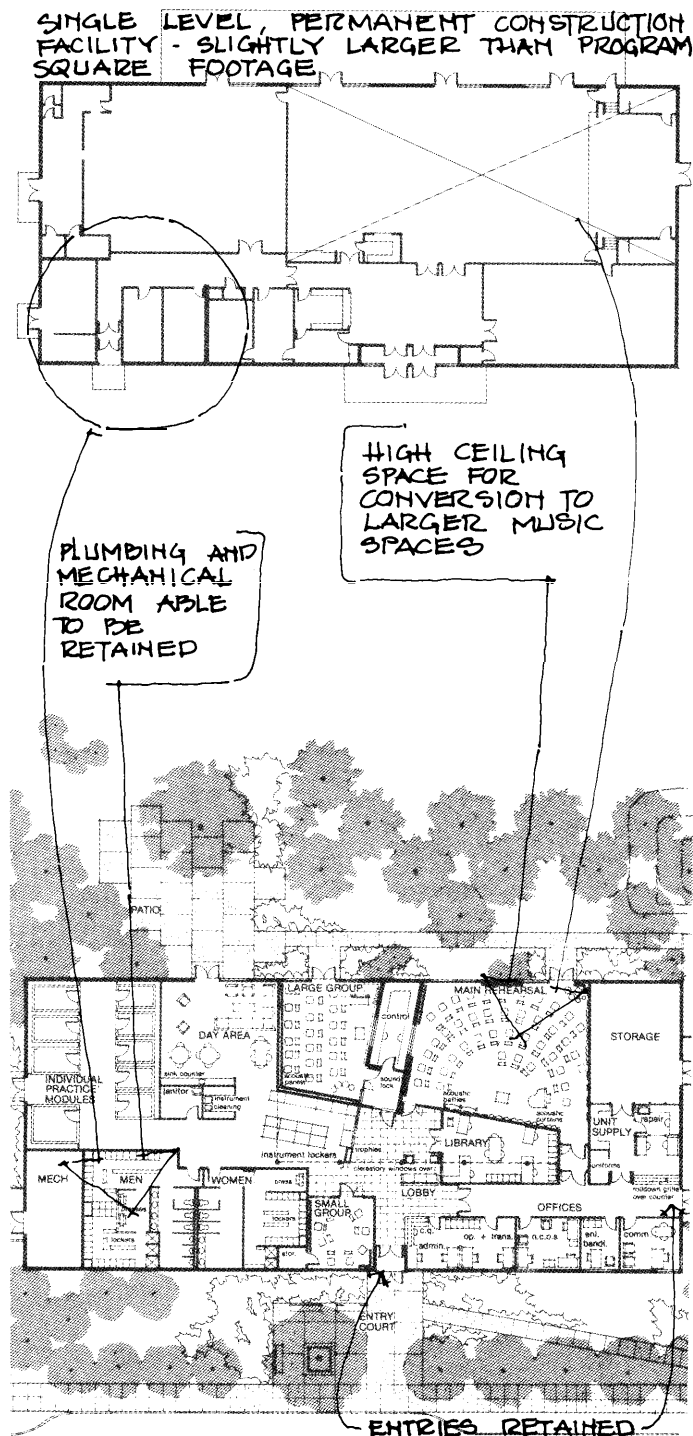


Figure 2-12. Band Training Facility Within Renovated Existing Building

to 12,000 to 13,000 square feet. This approach insures that music rooms- rehearsal, practice, control-will perform adequately, and have proper construction, shape, volume and isolation, to meet band training acoustic requirements. In addition, this approach provides better construction quality control standards for the acoustically sensitive spaces, typically easier to achieve in new construction than in renovation. (see Figure 2-13)

The following are the significant requirements and criteria for evaluation of potential buildings for renovation as Band

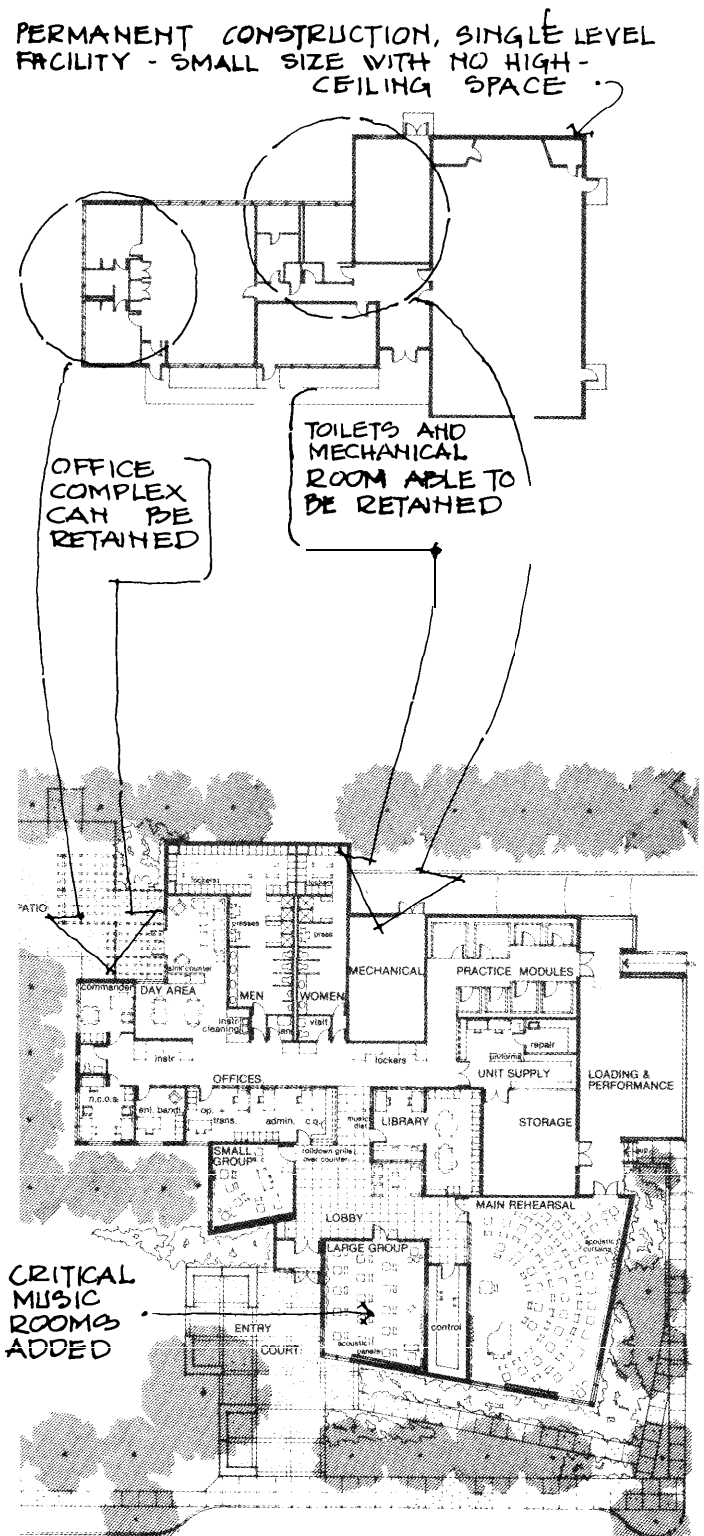


Figure 2-13. Band Training Facility in Renovated Existing Building plus Additions

Training Facilities. The site location criteria are the same as for a newly constructed building, discussed above, but may not be as fully realizable, given the location constraints of available buildings. The location benefits must be balanced against the quality and adaptability of the available facilities and the economic benefits of renovation

versus new construction. However, the essential building suitability criteria, as indicated below, must be fulfilled, overriding any site evaluation factors, because without these the facility will not perform adequately for band training use.

1. Building Size. The building size must be at least equal to the band training program square footage, and preferably larger, unless additional construction is planned. Conversion usually requires more square footage in order to fit all the required functions and spaces within the existing configuration and structure. For a 45 person band, the building should be between 12,500 and 15,000 square feet; for a 65 person, between 17,000 and 21,000 square feet. Minor compromises in the area of individual program spaces may need to be accepted to fit within an available building, but these should be made in the support, administration and the secondary spaces, not in the primary music spaces.

2. Ceiling Height. It is absolutely necessary, when attempting to install music rehearsal and practice rooms in an existing structure that there be areas of high ceiling heights—15 to 30 feet—to accommodate the large acoustical volume required for band practice. Without this high space, sound levels will be excessive and potentially dangerous to band personnel's hearing; and the quality of sound and ability to hear others will be impaired. For a 45 person band, at least 2,200 square feet of high space is required; for a 65 person band, at least 3,000.

3. Single Level. The existing building configuration should be such that all music rehearsal, practice, storage, and instrument areas can be on one level. A loading dock should be on the same level. This will make movement of large instruments and equipment easier. Any building configuration that results in use areas above or below music rooms should be avoided.

4. Construction. Band Training Facilities should be of permanent construction. Massive construction systems—masonry or concrete—are inherently more suitable for band facilities, for sound isolation reasons (see Paragraph

3-5, Acoustical Considerations, for further explanation). Buildings of other types of construction may be used, but with less successful results and with difficult renovation techniques required (see Chapter 5, Practical Approaches for Acoustical Construction, for discussion of these systems and techniques). Large open interior spaces are easier to renovate to fit band space requirements. Especially for the music spaces, structural bay sizes of 20 feet by 30 feet or greater are preferred.

5. Environmental Systems Reuse. Reuse of expensive elements of the existing building such as plumbing and mechanical systems is economically advantageous. Building suitability evaluation should reflect the feasibility of this reuse, in the context of the function layout and relationship requirements for Band Training Facilities, as presented in Chapter 3.

In order to reuse plumbing systems and toilet rooms, they must be located in an area of the building that is usable for the more private band functions, rather than near spaces to be used for semi-public activities such as music rehearsal, practice or lobby. If mechanical systems are to be reused, they must be capable of being modified to include humidity control for protection of instruments. Noisy equipment should not be near spaces to be used for music practice. All these systems must meet the requirements in Paragraph 3-6, Environmental Systems Design.

6. Budget Constraints. The renovations required to meet band training programmatic needs must be accomplished within the budget limitations set by Army regulations for additional investment, relative to the type and value of the facility. The cost of renovating an available existing facility must be compared with the cost and relative appropriateness of new construction. Only part of a desired renovation may be able to be afforded, or the work may need to be supplemented by band personnel. In such a case, the decision must be made whether a partial level of satisfaction of band desires and needs is appropriate as a basis for project development.